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MOC3030, MOC3031, MOC3032, MOC3033



OPTICALLY COUPLED BILATERAL SWITCH LIGHT ACTIVATED ZERO VOLTAGE CROSSING TRIAC

DESCRIPTION

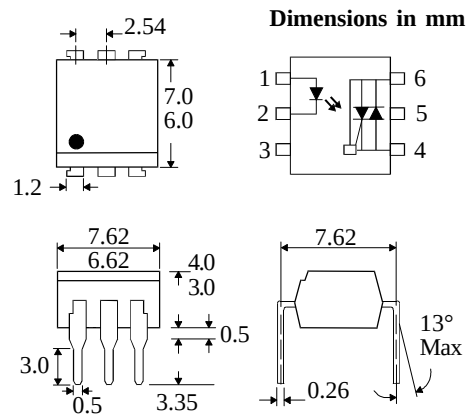
The MOC303_ Series are optically coupled isolators consisting of a Gallium Arsenide infrared emitting diode coupled with a monolithic silicon detector performing the functions of a zero crossing bilateral triac mounted in a standard 6 pin dual-in-line package.

FEATURES

- Options :-
10mm lead spread - add G after part no.
Surface mount - add SM after part no.
Tape&reel - add SMT&R after part no.
- High Isolation Voltage ($5.3\text{kV}_{\text{RMS}}$, 7.5kV_{PK})
- Zero Voltage Crossing
- 250V Peak Blocking Voltage
- All electrical parameters 100% tested
- Custom electrical selections available

APPLICATIONS

- CRTs
- Power Triac Driver
- Motors
- Consumer appliances
- Printers



ABSOLUTE MAXIMUM RATINGS (25 °C unless otherwise noted)

Storage Temperature _____ -40°C - $+150^{\circ}\text{C}$
 Operating Temperature _____ -40°C - $+100^{\circ}\text{C}$
 Lead Soldering Temperature _____ 260°C
 (1.6mm from case for 10 seconds)
 Input-to-output Isolation Voltage (Pk) _____ 7500 Vac
 (60 Hz , 1sec. duration)

INPUT DIODE

Forward Current _____ 50mA
 Reverse Voltage _____ 6V
 Power Dissipation _____ 120mW
 (derate linearly $1.41\text{mW}/^{\circ}\text{C}$ above 25°C)

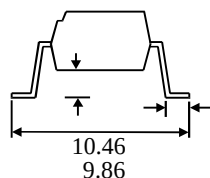
OUTPUT PHOTO TRIAC

Off-State Output Terminal Voltage _____ 250V
 RMS Forward Current _____ 100mA
 Forward Current (Peak) _____ 1.2A
 Power Dissipation _____ 150mW
 (derate linearly $1.76\text{mW}/^{\circ}\text{C}$ above 25°C)

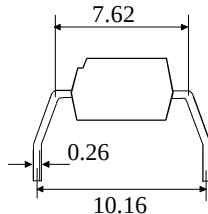
POWER DISSIPATION

Total Power Dissipation _____ 250mW
 (derate linearly $2.94\text{mW}/^{\circ}\text{C}$ above 25°C)

OPTION SM SURFACE MOUNT



OPTION G



ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ Unless otherwise noted)

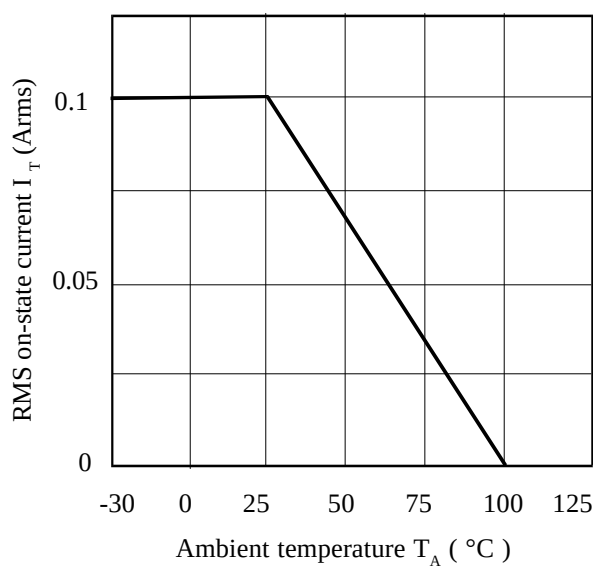
PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITION
Input	Forward Voltage (V_F) Reverse Current (I_R)		1.2	1.5 100	V μA	$I_F = 30\text{mA}$ $V_R = 6\text{V}$
Output	Peak Off-state Current (I_{DRM}) Peak Blocking Voltage (V_{DRM}) On-state Voltage (V_{TM}) Critical rate of rise of off-state Voltage (dv/dt)	250	1.8	300 3.0	nA V V $\text{V}/\mu\text{s}$	$V_{\text{DRM}} = 250\text{V}$ (note 1) $I_{\text{DRM}} = 300\text{nA}$ $I_{\text{TM}} = 100\text{mA}$ (peak)
Coupled	Input Current to Trigger (I_{FT}) (note 2) MOC3030 MOC3031 MOC3032 MOC3033 Holding Current , either direction (I_H) Input to Output Isolation Voltage V_{ISO}			30 15 10 5	mA mA mA mA μA V_{RMS} V_{PK}	$V_{\text{TM}} = 3\text{V}$ (note 2) See note 3 See note 3
Zero Crossing Charact- -eristic	Inhibit Voltage (V_{IH}) Leakage in Inhibited State (I_S)			35 500	V μA	$I_F = \text{Rated } I_{\text{FT}}$ MT1-MT2 Voltage above which device will not trigger $I_F = \text{Rated } I_{\text{FT}}$ $V_{\text{DRM}} = 250\text{V}$ off-state

Note 1. Test voltage must be applied within dv/dt rating.

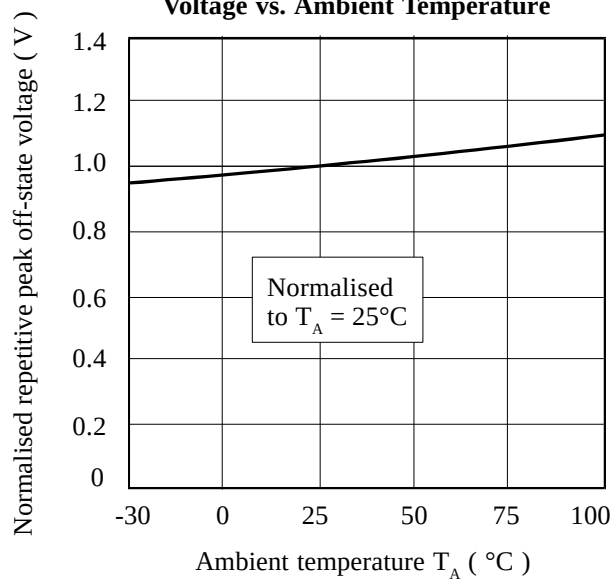
Note 2. Guaranteed to trigger at an I_F value less than or equal to max. I_{FT} , recommended I_F lies between Rated I_{FT} and absolute max. I_F .

Note 3. Measured with input leads shorted together and output leads shorted together.

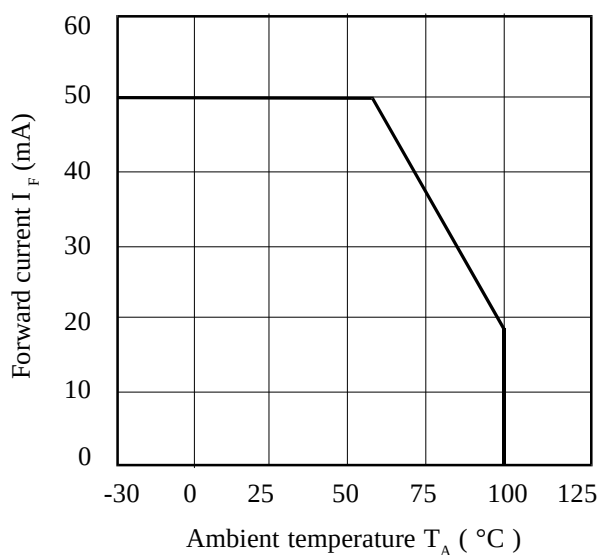
RMS On-state Current vs. Ambient Temperature



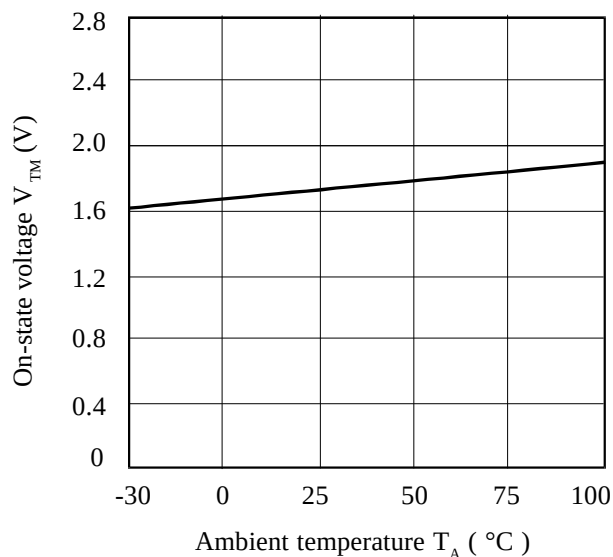
Normalised Repetitive Peak Off-state Voltage vs. Ambient Temperature



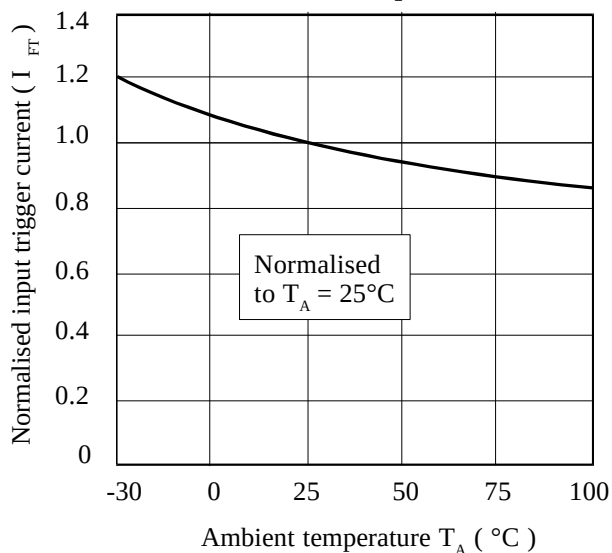
Forward Current vs. Ambient Temperature



On-state Voltage vs. Ambient Temperature



Normalised Input Trigger Current vs. Ambient Temperature



On-state Current vs. On-state Voltage

